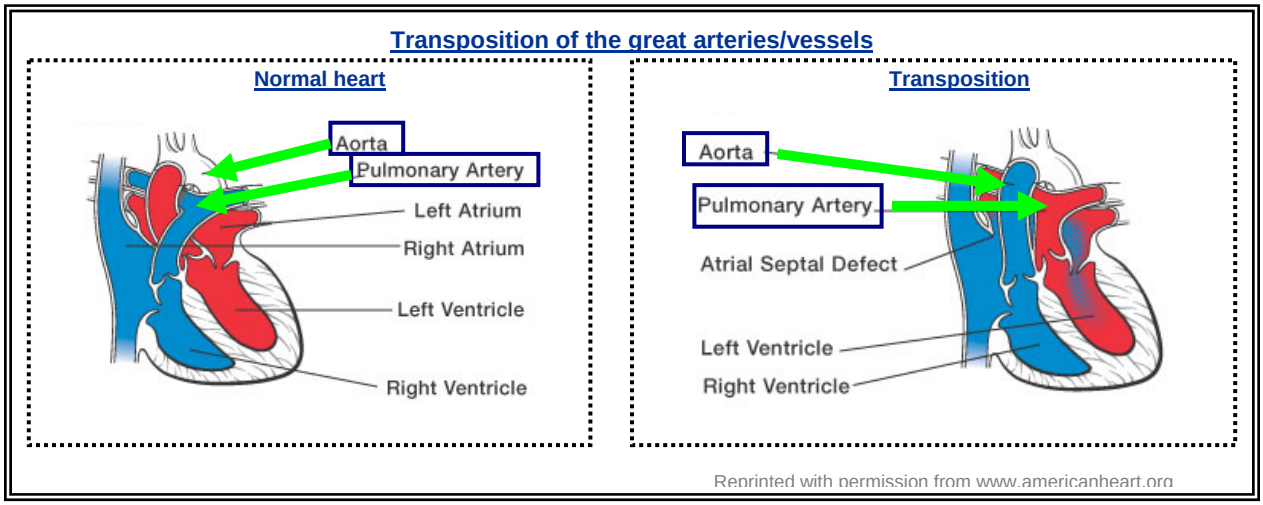
Transposition of the Great Arteries (or Vessels) (TGA / TGV)

What is transposition of the great arteries / vessels?

Normally, there are two separate blood vessels leaving the heart: the **aorta** (which carries blood to the body) and the **pulmonary artery** (which carries blood to the lungs). For babies who have TGA / TGV, these vessels are **transposed** (switched). Because of this reversal, the aorta carries low-oxygen blood from the right ventricle to the body. The pulmonary artery carries oxygen-rich blood back to the lungs. Because the aorta is carrying low-oxygen blood to the body, babies with TGA/TGV usually have **cyanosis** (blue skin color due to lack of oxygen).

Most babies with TGA / TGV survive because they have another heart defect that allows oxygen-rich blood to reach the body. These additional heart defects may include an **atrial septal defect (ASD)** (opening between the two upper chambers of the heart) or a **ventricular septal defect (VSD)** (opening between the two lower chambers of the heart). Even when other heart defects are present, they often cannot fully compensate for the switched vessels in order to support life for an extended period of time.

Approximately 5 – 7% of babies born with congenital (present at birth) heart defects are born with TGA/TGV.



What causes TGA / TGV?

Currently, the exact cause of TGA / TGV is not known. Heredity likely plays a role in the development of all heart defects, meaning that if someone had a congenital heart defect, he or she has an increased chance of having a child with a heart defect.

How is TGA / TGV treated?

TGA / TGV is most commonly repaired with a surgical procedure called an "arterial switch operation" (aorta and pulmonary artery are switched so that the aorta and pulmonary artery are connected to the correct ventricles). Any other heart defects present (such as an ASD or VSD) may also be needed to restore normal blood flow. Your child's doctor(s) will discuss appropriate treatment options with you.

For more information

American Heart Association - http://www.americanheart.org/presenter.jhtml?identifier=11105
Cincinnati Children's Hospital Medical Center's Heart Center Encyclopedia – http://www.cincinnatichildrens.org/health/heart-encyclopedia/default.htm
MedlinePlus - http://www.nlm.nih.gov/medlineplus/congenitalheartdefects.html
National Heart Lung and Blood Institute - http://www.nhlbi.nih.gov/health/dci/Diseases/chd/chd_what.html

Sources: Cincinnati Children's Hospital, American Heart Association